Catalogue of American Amphibians and Reptiles.

McCranie, J.R. 2008. *Bolitoglossa dunni*.

Bolitoglossa dunni (Schmidt)

Oedipus morio: Dunn 1926:387 (part).
Oedipus dunni Schmidt 1933:16 (part). Type-locality, "mountains west of San Pedro Honduras. Altitude 4500 feet." (See **Remarks**). Holotype, Field Museum of Natural History (FMNH) 4550, an adult male, collected by K.P. Schmidt, 5 May 1923 (examined by author).
Oedipus [sp.]: Schmidt 1942:27 (part).
Magnadigita dunni: Taylor 1944:201.
Bolitoglossa dunni: Wake and Brame 1963:386 (part). First use of present combination.
B[olitoglossa]. (Magnadigita) dunni: Parra-Olea et al. 2004:336.

• **CONTENT**. No subspecies are recognized.

• **DEFINITION**. *Bolitoglossa dunni* is a moderately large salamander (SVL 47.9–59.6 mm, mean = 54.2± 4.0 mm in 12 adult males, 50.1–73.2 mm, mean = 62.3±8.0 mm in 13 adult females) with a long, broad head (head length/SVL 0.242–0.270 in adult males, 0.227–0.261 in adult females; head width/SVL 0.162–0.178 in adult males, 0.160–0.185 in adult females). The snout is truncate to broadly rounded in dorsal aspect and in lateral profile. The labial protuberances are well developed both sexes and pronounced in adult males. Adult males have a distinct, oval-shaped mental gland cluster. The eyes are slightly protuberant and not or only narrowly visible beyond the margin of the jaw when viewed from below. The postorbital groove is shallow and irregular and extends posteriorly from the eye before turning sharply ventrally to connect with the gular fold, and another groove proceeds sharply ventrally just posterior to the lower jaw and extends irregularly across the throat anterior to the gular fold. There is no sublingual fold. The maxillary teeth number 66–93 (mean = 77.7±8.0) in adult males, 66–91 (mean = 75.4±7.2) in adult females, and extend posteriorly to a level beyond the center of the orbit, and increase in number with increasing adult size. The vomerine teeth number 24–37 (mean = 30.0±4.4) in 11 adult males, 21–40 (mean = 32.5± 4.9) in adult females, and are in long, single, arched series that extend laterally to a level slightly beyond the outer border of the choanae. The premaxillary teeth number 2–6 (mean = 3.8±1.4) in adult males and 6–10 (mean = 7.6±1.3) in adult females. The premaxillary teeth are enlarged and pierce the lip in adult males and are not enlarged and are located posterior to the lip and in line with the maxillary series in all females. There are 13 costal grooves. The tail is nearly rectangular in cross section anteriorly, becoming ovoid for about the distal one-third of its length. The tail is strongly constricted basally and moderately long (tail length/SVL 0.895–1.043 in 10 adult males, 0.801–0.884 in 12 adult females). The limbs are relatively slender and long (hind limb length/SVL 0.255–0.298 in adult males, 0.250–0.271 in adult females). The adpressed limbs vary from slightly overlapping to a limb interval of 1.0 costal fold in adult males and a limb interval of 0.5–2.0 costal folds in adult females. The digits are moderately webbed, with from one-half to one and one-half segments on both sides of Toe III on the forelimbs and of Toe III between Toes III–IV on the hind limbs free of webbing. The protruding toe tips are bluntly rounded and all toe tips have well-developed subdigital pads. The relative length of the toes on the forelimbs is I<IV<II<III, whereas that on the hind limbs is I<V<II<IV<III. The postiliac gland cluster is fairly distinct to not evident. Males have cloacal papillae and females have cloacal folds (the above data taken by McCranie and published in McCranie and Wilson 1993, 2002).

FIGURE 1. Adult male (USNM 523280) of *Bolitoglossa dunni* (photograph by the author).

There is very little color variation in this species with color in life described as follows (color codes and numbers from Smithe 1975–1981). The dorsal and lateral surfaces of the head, body, and tail are usually uniformly Mahogany Red (132B) with the ventral and subcaudal surfaces a slightly paler Mahogany Red. The ventral surfaces usually also have small gold or white spots. The dorsal surfaces of the limbs are Mahogany Red with conspicuous gold or white spots on the feet. Other specimens have pale red, almost pink, dorsal and lateral surfaces. The iris is mottled brown and red.

Color in alcohol: all dorsal and lateral surfaces of the head, body, and tail vary from pale brown, to reddish brown, to dark purplish brown. The pale spots in life on the dorsal surfaces of the feet are usually not evident or are poorly defined. The ventral surfaces of the head and body are slightly paler than the dorsal and lateral surfaces and are moderately flecked with brown. The subcaudal surface is slightly paler than the dorsal and lateral surfaces and is slightly flecked with brown.

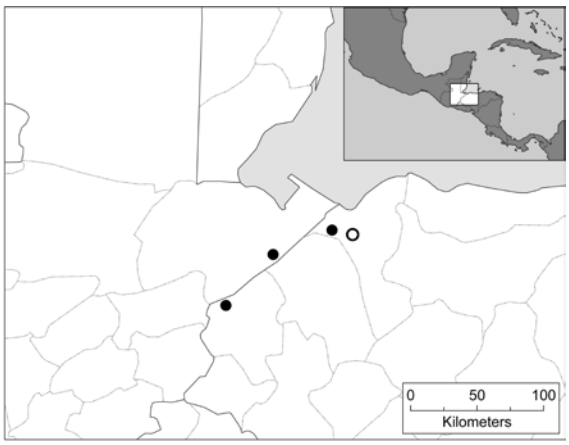
• **DIAGNOSIS**. *Bolitoglossa dunni* is a member of the *B. dunni* species group of the subgenus *Magnadigita* Taylor 1944 (Parra-Olea et al. 2004). Thirteen species were included in this species group by McCranie et al. (2005). *Bolitoglossa dunni* is the only species in the group with the dorsal surfaces of the head, body, and tail and the subcaudal surface some shade of uniformly red in life and with conspicuous gold or white spots on the dorsal surfaces of the feet. The species also differs from the other species in the group (except DNA unknown in *B. oresbia*) in its

sequence of mitochondrial DNA (Parra-Olea et al. 2004).

• **DESCRIPTIONS**. Detailed descriptions of external morphology are in McCranie and Wilson (2002) and McCranie and Castañeda (2007). The type description of the species (Schmidt 1933) is a composite of *B. dunni* and *B. conanti* (see Larson 1983a, McCranie and Wilson 1993).

• **ILLUSTRATIONS**. Color photographs are in McCranie and Wilson (2002) and McCranie and Castañeda (2007). A black-and-white photograph is in McCranie and Wilson (1993). Drawings of a forefoot and a hind foot of the holotype are in Taylor (1944). A black-and-white photograph taken at the type-locality is in Schmidt (1942). McCranie and Wil-son (2002) and McCranie and Castañeda (2007) included color habitat photographs taken in the vicinity of one of the collecting localities for the species.

• **DISTRIBUTION**. *Bolitoglossa dunni* occurs in the sierras de Omoa and Espíritu Santo on the Atlantic versant of northwestern Honduras and adjacent Guatemala. The known elevational range of occurrence is from about 1200 to 1600 m in the Lower Montane Wet Forest and Premontane Wet Forest formations (terminology slightly modified from Holdridge 1967).



Map. Distribution of *Bolitoglossa dunni*. The open circle denotes the type-locality and the dots other localities.

• **FOSSIL RECORD**. None.

• **PERTINENT LITERATURE**. Larson (1983a), using electrophoretic data, first discovered that *B. dunni* as then understood was actually a composite of two species. McCranie and Wilson (1993) described the second species as *B. conanti*. What little is known about the natural history of this species was discussed by McCranie and Wilson (1993, 2002) and McCranie and Castañeda (2007). McCranie and Wilson (1995b) mentioned that *B. dunni* was sympatric with their new species (*B. diaphora*). McCranie and Wilson (2002) discussed its distribution by Honduran physiographic and ecogeographic regions. Wilson and McCranie (2003) discussed its status as an "indicator species" used to measure environmental stability in Honduras and those authors considered the species to be highly vulnerable, but McCranie and Wilson (2996) noted that it does appear to have at least one stable population remaining. Wilson and McCranie (2004a) discussed its conservation status in Honduras and also considered the species to be highly vulnerable. Wilson and McCranie (2004b) discussed its distribution within the Honduran cloud forests. Wilson and McCranie (2004c) and McCranie (2004) discussed its distribution in Parques Nacional El Cusuco and Cerro Azul, respectively. McCranie (2006) listed its Honduran localities and museum specimen numbers. Larson (1983a, 1983b) studied its electrophoretic proteins and aspects of its morphology, respectively (he also included specimens of *B. conanti* among his *B. dunni*). Shaffer and Breden (1989) studied its allozyme variation as related to life history and Nevo and Beiles (1991) studied its genetic diversity (although both studies included a composite of both *B. dunni* and *B. conanti*). Parra-Olea et al. (2004) studied its mitochondrial DNA and presented a phylogenetic analysis of its relationships within the genus *Bolitoglossa* that placed it in the *B. dunni* species group and in the subgenus *Magnadigita* Taylor (1944; also see Wiens et al. 2006). Distinguishing features of this species were included in diagnoses of new species of *Bolitoglossa* by McCranie and Wilson (1993, 1995a), McCranie and Cruz (1996), Greenbaum (2004) and McCranie et al. (2005). Greenbaum (2004) reproduced the figure of the "*Magnadigita*" clade previously published in Parra-Olea et al. (2004). Osteology is discussed in Wake (1966), Wake and Dresner (1967), and Wake and Brame (1969). Physiological notes are given in Feder et al. (1982). McCranie and Wilson (1993, 1995a, 2002), McCranie et al. (2005), and McCranie and Castañeda (2007) included maps showing the known localities of this species in Honduras. Campbell and Smith (1998) first reported this species from Guatemala.

The species is mentioned in various checklists and similar compendia (all references marked with an asterisk in this section included *Bolitoglossa conanti* in *B. dunni*): (Anonymous 1994, Brame 1967*, Brame et al. 1978*, Campbell 1999, Campbell and Vannini 1989*, Duellman 2001, Duellman and Schlager 2003, Elias 1984*, Frank and Ramus 1995, Frost 1985*, Frost et al. 2006, Gorham 1974*, Harding 1983*, Kluge 1983*, Larson et al. 2003, Marx 1958*, McCranie et al. (2006), Meyer 1969*, Meyer and Wilson 1971*, Peters 1952*, Raffaëlli 2007, Schmidt 1936*, 1942*, Sokolov 1988*, Stuart 1943*, 1952*, Townsend et al. 2006, Villa et al. 1988*, Wake 1987*, Wake and Brame 1969*, Wake and Lynch 1976*, Wilson 1983*, Wilson and McCranie 1994, Wilson and Townsend 2006, and Wilson et al. 2001.

• **REMARKS**. By using the information in Schmidt (1942), copies of Schmidt's field notes on the collecting trip, and the topographical map of the mountains west of San Pedro Sula (Instituto Geográfico Nacional 1975), I believe that I have been able to pin-

point the precise locality of Schmidt's collecting station and type-locality for this species (see McCranie and Wilson 2002). This more precise type-locality is apparently "along the Quebrada del Infierno on the eastern slopes of Cerro de la Virtúd, 1370 m elevation, 15°32'N, 88°06'W."

• **ETYMOLOGY**. The name *dunni* is a patronym honoring Emmett Reid Dunn, who published a monograph on the salamanders of the family Plethodontidae in 1926.

• **COMMENT**. McCranie and Castañeda (2007) suggested the vernacular name Salamandra Roja for this species. Sokolov (1988) used the vernacular name Dunn's Salamander for this species, whereas Frank and Ramus (1995) and Wrobel (2004) used Dunn's Mushroomtongue Salamander. Museum acronyms follow Leviton et al. (1985).

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James R. McCranie, 10770 SW 164th Street, Miami, FL 33157–2933, USA (jmccrani@bellsouth.net).

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